

CLAIMS

We claim:

1. A coating composition comprising about 40-90% by weight of film forming binder and 10-60% by weight of an organic liquid carrier; wherein the
5 binder comprises about
- (a) 10-70% by weight, based on the weight of the binder, of a dispersed gelled acrylic polymer, the polymer consisting essentially of
- (i) a core of comprising polymerized ethylenically unsaturated monomers which is not soluble in the organic liquid carrier and having
10 chemically grafted thereto
- (ii) substantially linear stabilizer polymeric components that are soluble in the organic liquid carrier comprising polymerized ethylenically unsaturated monomers and having a weight average molecular weight of about 500-20,000 determined by GPC (gel permeation
15 chromatography) using polystyrene as the standard;
- wherein the core, the stabilizer polymeric component, or both contain at least 3% by weight of polymerized ethylenically unsaturated monomers having isocyanate groups attached thereto that are capable of reacting with component (b);
- (b) 30-90% by weight, based on the weight of the binder, of an
20 oligomer or polymer or both having functional components capable of reacting with the isocyanate groups of component (a); and
- (c) 0-60% by weight, based on the weight of the binder, of an organic polyisocyanate crosslinking agent.
2. The coating composition of claim 1, wherein the dispersed acrylic polymer comprises 30-70% by weight of the core and 70-30% of linear stabilizer polymeric components.
3. The coating composition of claim 1, wherein the linear stabilizer polymeric components consist of macromonomers that are polymerized into the
30 core via a single terminal point of ethylenic unsaturation of the macromonomer and the monomers that form the macromonomer are polymerized in the presence of a cobalt chain transfer agent to provide the single point of ethylenic unsaturation.

4. The coating composition of claim 1, wherein the isocyanate groups are attached to the core, the stabilizer components, or both via post reaction of isocyanate reactive groups therein with polyisocyanate compounds.

5. The coating composition of claim 1 wherein the isocyanate groups are attached to the core, the stabilizer components, or both via copolymerization of isocyanate functional monomers therein in the absence of isocyanate reactive monomers.

6. The coating composition of claim 1 wherein the oligomer and polymer of component (b) each have hydroxy groups that are reactive with component (a) of the composition.

7. The coating composition of claim 1 wherein the isocyanate groups of component (a) are concentrated essentially only on the stabilizer components.

8. The coating composition of claim 1 wherein the core of the dispersed gelled acrylic polymer consists of polymerized monomers of styrene, hydroxy ethyl acrylate, methyl methacrylate, glycidyl methacrylate, methacrylic acid, allyl methacrylate and methyl acrylate and the linear stabilizer components of the dispersed gelled acrylic polymer consisting of polymerized monomers of butyl methacrylate, isobornyl methacrylate, 2-ethyl hexyl methacrylate, hydroxy ethyl methacrylate and t-butyl aminoethyl methacrylate, with the polymer being post reacted with a polyisocyanate to attach isocyanate groups thereto.

9. The coating composition of claim 1 wherein the core of the dispersed gelled acrylic polymer consists of polymerized monomers of styrene, methyl methacrylate, glycidyl methacrylate, hydroxy ethyl acrylate, methacrylic acid, methyl acrylate and the linear stabilizer components of the dispersed acrylic polymer consist of polymerized monomers of styrene, butyl methacrylate, butyl acrylate, hydroxy ethyl acrylate, methacrylic acid, isobornyl methacrylate and glycidyl methacrylate, with the polymer being post reacted with a polyisocyanate to attach isocyanate groups thereto.

10. The coating composition of claim 1 wherein the core of the dispersed gelled acrylic polymer consists of polymerized monomers of styrene, isocyanato ethyl methacrylate, methyl methacrylate, glycidyl methacrylate, methyl acrylate and allyl methacrylate, and the linear stabilizer components of the dispersed acrylic polymer consist of polymerized monomers of styrene, 2-ethyl hexyl methacrylate, butyl methacrylate, isobornyl methacrylate, isocyanato ethyl methacrylate, and hydroxy ethyl acrylate.

11. The coating composition of claim 1 which contains a hydroxy functional acrylic polymer or polyester with weight average molecular weight of greater than 2,000.

12. The coating composition of claim 1 which contains a hydroxy functional oligomer having a weight average molecular weight of 200-2,000 and a polydispersity of less than 1.7.

13. The coating composition of claim 1 which contains a hydroxy functional dispersed gelled acrylic polymer.

14. The coating composition of claim 1 which is free of component (c).

15. A substrate coated with a dried cured layer of the coating composition of claim 1.

16. An isocyanate adduct useful as an isocyanate crosslinking agent in solvent borne coating compositions, comprising a dispersed gelled acrylic polymer consisting essentially of

(i) a core of comprising polymerized ethylenically unsaturated monomers which is not soluble in the organic liquid carrier and having chemically grafted thereto

(ii) substantially linear stabilizer polymeric components that are soluble in the organic liquid carrier comprising polymerized ethylenically unsaturated monomers and having a weight average molecular weight of about 500-20,000 determined by GPC (gel permeation chromatography) using polystyrene as the standard;

wherein the core, the stabilizer polymeric component, or both contain polymerized ethylenically unsaturated monomers having isocyanate groups attached thereto.